

# NEWSLETTER

THURSDAY  
25/12/2025

## ★ Spotlights

- Special Issue Part 1 on Journal of Integrated Design and Process Science featured papers from TE2024.
- The Centre for People-Led Net Zero website has been launched.

[Read more on the Spotlights page](#)

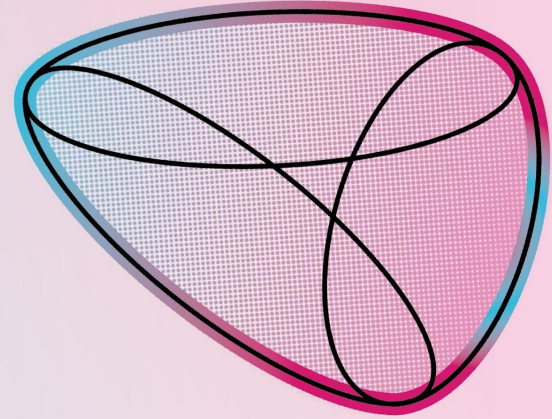
## ▶▶ Coming up Next

- Join us at [TE2026!](#)
- New event alert: Forum on Philosophy, Engineering and Technology
- New event alert: World Immersive Learning Labs Symposium

[Check out the details on the Coming up Next page](#)

## TE 2026 The 33rd International Conference on Transdisciplinary Engineering

2026 .  
6 Mon. ► 10 Fri.  
Taiwan, Tainan, National Cheng Kung University



## Fresh off the Press

**[BOOK] Contesting Megaprojects. Complex impacts, urban disruption, and quest for sustainability**

Gerardo del Cerro Santamaría

**Sustainable healthcare plastic products: application of the transition engineering design approach yields a novel concept for circularity and sustainability**

Florian Ahrens; Lisa-Marie Nettlenbusch; Susan Krumdieck; Alexander Hasse

**Performance analysis of a domestic refrigerator using R134a/CeO2 nano-enhanced refrigerants: energy, exergy, and economic perspectives**

K. Arumuganainar; D. Palaniswamy; K. Viswanath; R. Jeya Raj

**Conceptualizing transdisciplinary responsibility**

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**A framework for assessing the potential of artificial intelligence in the circular bioeconomy**

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[Check out more on the Publications page](#)



Welcome to our new members! Since the last newsletter we have grown from 277 to 282 members (25 Dec 2025). ISTE [LinkedIn Group](#) members have increased from 175 to 177 members.

Please continue to promote the Society through your networks and if you see any opportunities for us to reach new audiences, please let us know.

If you are a new member, let other members know you better by sharing your profiles with us!

## We want to hear from you!

Share your insights, projects, milestones, or ideas with our global community, including publications, conference reflections, teaching practices, collaborations, or good news worth celebrating.

👉 [Call for Content](#)

Your voice makes this truly our newsletter, showcasing the vibrant spirit of ISTE. 🌍🤝

## Journal of Integrated Design and Process Science Special Issue (Part 1) on TE2024 is published!

This Special Issue builds on the TE2024 conference theme of Transdisciplinary Engineering for Social Change. Part 1 features an editorial on A People-led Vision invites researchers and practitioners to rethink how systems are conceived and transformed – with people at the core. Four extended papers each offers unique contribution in diverse application contexts. Part 2 to follow soon.

See [Publications](#) in this issue for details.

## The Centre for People-Led Net Zero website has been launched!

In February 2025, a consortium of UK universities led by the University of Bath was awarded £5 million to establish a new transdisciplinary research centre - the Centre for People-Led Net Zero - focused on applying systems approaches to the challenge of achieving net zero.

We're excited to announce the launch of the Centre's new website (<https://www.people-led.org.uk/netzero>), created as a hub for resources, insights, and updates on our mission to accelerate the transition to a sustainable future. To keep up with the latest news, events, and opportunities to collaborate, we invite you to visit the website and follow our LinkedIn page (<https://www.linkedin.com/company/centre-for-people-led-net-zero/>).

**Dr. Susan Lattanzio**  
University of Bath



## Award for successful industrial collaboration - GKN Aerospace Scholar of 2025

Dr. Kristina M. Eriksson, Associate Professor at University West, Sweden, has been named GKN Aerospace Scholar of 2025 for her outstanding academic–industry collaboration. Recognised as a role model, she integrates applied research, education, and industrial projects through a strong transdisciplinary approach, delivering practical and sustainable value. The SEK 15,000 scholarship was awarded at University West's Christmas ceremony in December 2025.

News Link:

<https://www.mynewsdesk.com/se/hogskolanvast/news/aarets-gkn-stipendiat-utsedd-504489>

Related Blog:

<https://www.wilreflections.hv.se/2025/10/03/bringing-forth-transdisciplinary-research-approaches-for-human-centric-smart-automation-a-pathway-for-industrial-work-integrated-learning/>



# YEAR IN REVIEW

## Holiday Greetings to the ISTE community

As we reach the end of 2025, I am thankful for the good spirits and work of this community to advance research, teaching, and practice in transdisciplinary engineering.

We began last year with a series of listening workshops and preparation for the TE2025 conference at Tec de Monterrey. With emphasis on insights from the community sessions, we added new TE Forums, one on **contributions** and another on **communications**. Each of these sessions strengthened our society as we involve a broader set of voices in strategy and direction and organize better for implementation.

**If you have not yet submitted paper abstracts for <https://te2026.tw>, please do so soon.** Our friends at NCKU in Tainan are doing a wonderful job to prepare, with already more paper proposals submitted than in recent years. With the theme they have selected, we return to our roots for TE2026 **with design and product development, yet a clear TE emphasis on human agency.** I am very excited for the event in Taiwan!

With the theme they have selected, we return to our roots for TE2026 with design and product development, yet a clear TE emphasis on human agency.

We have also received proposals for TE2027 in Europe, with three positive proposals and one additionally in consideration. The board will reach out to our senior members from Europe with experience in hosting for their feedback in the selection process. We plan to have a decision by March.

The leadership team of ISTE has been able to see the seeds begin to sprout and have great expectations for increasing vibrancy for ISTE in 2026. We will be rolling out new society features and will again hold an online community dialogue approximately 3 months before our in-person conference.

Until then, I wish you the best of holidays and a Happy New Year.

**Bryan R. Moser**  
President, ISTE



# COMING UP NEXT

## Call for Abstracts for 2026 Forum on Philosophy, Engineering and Technology

The 2026 Forum on Philosophy, Engineering, and Technology (fPET) will be held June 9-11, 2026 at the University of Maryland College Park. Since 2007, fPET has had a mission to bring together engineers and philosophers for shared mutual understanding and collaboration. The call for 500 word abstracts, due January 25th, is described at the below address.

Website:

<https://philosophyengineering.com/fpet2026>

## World Immersive Learning Labs Symposium (WILLS) 2026

The World Immersive Learning Labs Symposium (WILLS) 2026 is to be held on March 4–6, 2026 at the University of the Philippines Open University in Los Baños, Laguna, Philippines. WILLS is a global forum bringing together educators, researchers, technologists, policymakers, and industry innovators to explore how AR, VR, MR, and the metaverse can advance learning and sustainability across education, industry, and society, featuring keynotes, panels, paper sessions, demonstrations, workshops, and lab tours. Contributions are welcomed in the form of presentations, panel discussions, technology demonstrations, workshops, or participation in community dialogues.

Proposal submissions and further details are available at <https://worldlearninglabs.com>

## The 33rd International Conference on Transdisciplinary Engineering

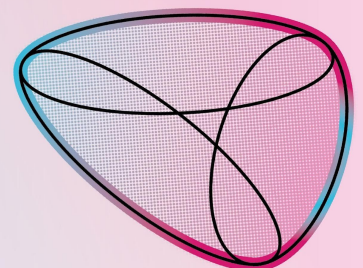
TE2026 – The 33rd International Conference on Transdisciplinary Engineering will be held on 6–10 July 2026 at National Cheng Kung University in Tainan, Taiwan. As the annual flagship conference of the International Society of Transdisciplinary Engineering (ISTE), TE2026 provides a key international forum for researchers, educators, and practitioners to share advances in transdisciplinary engineering research and practice.

The conference matters to the ISTE community because it directly supports our shared mission of advancing engineering beyond disciplinary boundaries. TE2026 fosters dialogue across engineering, design, technology, and the social sciences, enabling the exchange of methods, tools, and perspectives needed to address complex real-world challenges. By bringing together a diverse global community, TE2026 strengthens collaboration, inspires new research directions, and helps shape the future of transdisciplinary engineering.

Website: <https://te2026.tw/>

**TE 2026**  
The 33rd International  
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# PUBLICATIONS

## *Editorial:*

### **Transdisciplinary engineering for social change: a people-led vision**

**Yee Mey Goh; Susan Lattanzio; Robert Houghton; Linda Newnes**

DOI: [10.1177/10920617251382454](https://doi.org/10.1177/10920617251382454)

This Special Issue of the *Journal of Integrated Design and Process Science*, building on the 31st ISTE International Conference on Transdisciplinary Engineering on Engineering for Social Change, explores how transdisciplinary engineering can address complex societal challenges. It emphasizes integrating diverse knowledge, engaging affected stakeholders, and shifting values toward collaboration and shared understanding. The issue introduces a People-Led principle that positions people's creativity and needs at the center of socially responsible, resilient system design.

### **A framework for transdisciplinary engineering research: integrating interactive research and design methodologies**

**Kristina Säfsten; Fredrik Elgh; Gary Linnéusson; Roland Stolt; Paraskeva Wlazlak**

DOI: [10.1177/10920617251368348](https://doi.org/10.1177/10920617251368348)

This paper presents a work procedure developed and applied in a large-scale research project to support transdisciplinary engineering research. By integrating interactive research principles with a design research methodology framework, the approach helps manage complexity, incorporate diverse perspectives, and connect abstract knowledge with practical implementation. The study suggests the procedure and associated best practices as a useful framework for strengthening transdisciplinary engineering research.

### **T-Framework: a boundary object for facilitating stakeholders collaboration in realizing trustworthy cyber-physical systems**

**Muhammad Rusyadi Ramli; Fredrik Asplund**

DOI: [10.1177/10920617251364726](https://doi.org/10.1177/10920617251364726)

This study examines a trustworthiness framework as a boundary object to support cross-disciplinary collaboration in the development of trustworthy cyber-physical systems. Drawing on focus groups with practitioners from academia and industry, it evaluates how effectively the framework helps bridge knowledge boundaries and manage diverse perspectives. The study identifies gaps in shared understanding and proposes refinements to strengthen alignment and coordination among stakeholders.

### **Co-development of technology for measuring faecal contamination of drinking water**

**Eleni Koutsoumpeli; Rhys Ashton; David Hunter; Hannah Walker; Kaniz Chowdhury; Daniel Vorbach; Jonathan Ensor; James WB Moir; Steven Johnson**

DOI: [10.1177/10920617251319552](https://doi.org/10.1177/10920617251319552)

This study reports on a transdisciplinary, participatory project to co-develop water quality monitoring technology in a developing country context. Through community engagement, water sampling, and molecular analysis in Vanuatu, stakeholder insights informed technical and institutional requirements, leading to the design of a low-cost device capable of detecting very low levels of faecal contamination in drinking water.

# PUBLICATIONS

## Designing transdisciplinary research collaboration towards Industry 5.0 to reach human-centric smart manufacturing

Kristina M Eriksson; Anna Karin Olsson; Fredrik Danielsson

DOI: [10.1177/10920617251349546](https://doi.org/10.1177/10920617251349546)

This study explores how transdisciplinary research collaboration can support human-centric smart manufacturing in Industry 5.0. Based on a qualitative case study, it shows that trust-based, iterative collaboration helps address human-technology challenges and motivates industry engagement.

**Keywords:** *engaged scholarship; human-technology nexus; industrial work-integrated learning; industry 4.0; industry 5.0; manufacturing management; smart automation; transdisciplinary research*

## Sustainable healthcare plastic products: application of the transition engineering design approach yields a novel concept for circularity and sustainability

Florian Ahrens; Lisa-Marie Nettlebusch; Susan Krumdieck; Alexander Hasse

DOI: [10.3390/su17104672](https://doi.org/10.3390/su17104672)

Durable plastics pose a sustainability challenge in orthopedic healthcare, where strict regulations and established supply chains favor single-use fossil-based materials. This study reports on a transition engineering design sprint with an orthopedic company, resulting in two co-designed concepts, a plastics value map and a product reuse data system, that show how circular strategies could support sustainability goals while maintaining business viability.

**Keywords:** *sustainable engineering design; orthopedic healthcare; transition engineering; co-design; plastic products*

## Limited integration of transdisciplinary skills in German mechanical engineering education – insights from thematic analysis of module handbooks

Katharina Hunger; Florian Ahrens

DOI: [10.5281/zenodo.17631590](https://doi.org/10.5281/zenodo.17631590)

Engineers need transdisciplinary skills to address complex sustainability challenges, but their integration in engineering education is unclear. An analysis of mechanical engineering curricula at German TU9 universities finds uneven coverage, with real-world practice emphasized and skills for wicked problems and whole-systems engineering underrepresented.

*Presented at the SEFI (European Society for Engineering Education, Société Européenne pour la Formation des Ingénieurs) Annual Conference at Tampere University, Finland.*

## Performance analysis of a domestic refrigerator using R134a/CeO<sub>2</sub> nano-enhanced refrigerants: energy, exergy, and economic perspectives

K. Arumuganainar; D. Palaniswamy; K. Viswanath; R. Jeya Raj

DOI: [10.1504/IJEX.2025.10073021](https://doi.org/10.1504/IJEX.2025.10073021)

This study investigates the use of ceria (CeO<sub>2</sub>) nanoparticle-enhanced refrigerants to improve household refrigerator performance, addressing rising energy consumption from compressor loads. Experiments with increasing CeO<sub>2</sub> concentrations show that the highest blend improves cooling capacity, coefficient of performance, and exergy efficiency while reducing exergy losses. The results indicate that nanoparticle additives can enhance refrigeration efficiency and energy performance, with operational costs remaining the dominant economic factor, supporting their potential role in more sustainable refrigeration systems.

# PUBLICATIONS

## Conceptualizing transdisciplinary responsibility

Sue L. T. McGregor

Link:

<https://tjm.scholasticahq.com/article/146030-conceptualizing-transdisciplinary-responsibility>

This exploratory study reviews the emerging but limited literature on transdisciplinary responsibility and finds that the concept remains largely undefined. Through qualitative analysis, it frames transdisciplinary responsibility as a collective and moral responsibility distinct from individual, causal responsibility, and identifies early indications of how it may be enacted in practice. The study encourages management scholars and practitioners to engage with this conceptualization to support more effective transdisciplinary work.

## A framework for assessing the potential of artificial intelligence in the circular bioeconomy

Munir Shah; Mark Wever; Martin Espig

DOI: [10.3390/su17083535](https://doi.org/10.3390/su17083535)

Artificial intelligence has strong potential to support the circular bioeconomy, yet its applications remain uneven and fragmented. This work introduces a framework linking key AI functions with bioeconomy domains and shows, through a biowaste valorization case study, that current efforts focus mainly on prediction and optimization, while discovery and design are largely underexplored.

**Keywords:** *circular bioeconomy; artificial intelligence; framework; biowaste valorization; sustainability*

*New book*

## Contesting Megaprojects

Complex impacts, urban disruption, and quest for sustainability

Gerardo del Cerro Santamaría

Link:

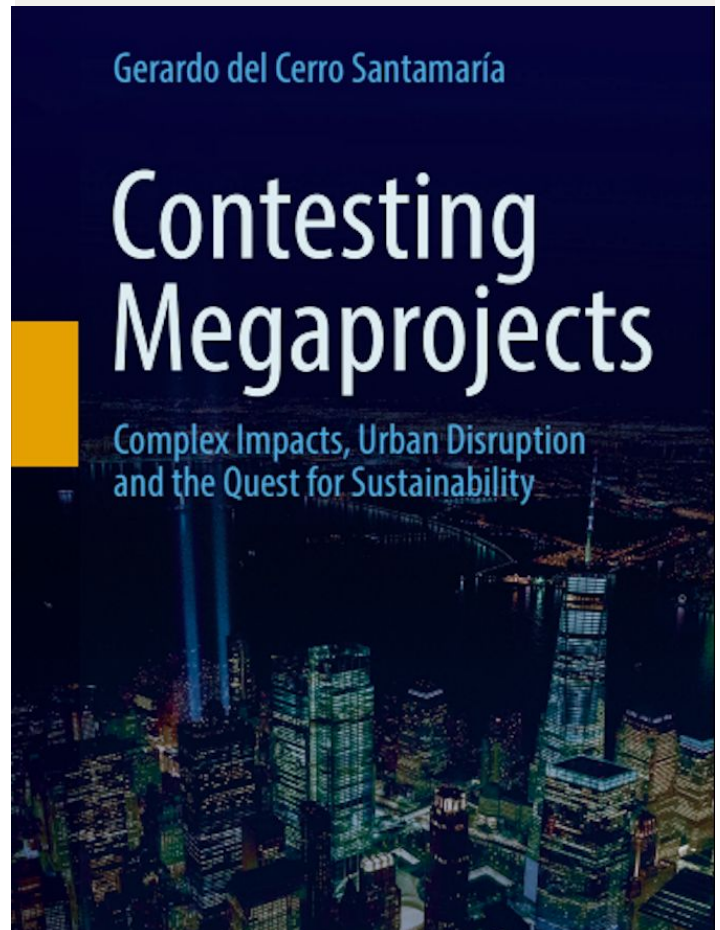
<https://link.springer.com/book/10.1007/978-3-03-1-98382-5>

This book argues that urban megaprojects are inherently disruptive and fundamentally incompatible with sustainable, human-centered urban development. By examining global case studies, it shows how megaprojects generate complex socioeconomic, environmental, and political harms and calls for a transdisciplinary approach to sustainability to critically assess and contest their impacts.

Gerardo del Cerro Santamaría

# Contesting Megaprojects

Complex Impacts, Urban Disruption  
and the Quest for Sustainability



# NEW MEMBERS

## Dr. Yusuke Mihara (Japan)

Yusuke Mihara is an Associate Professor at the Shizuoka Institute of Science and Technology and a Research Assistant Professor at Keio University's Graduate School of System Design and Management. His research integrates systems engineering, system design, and multidisciplinary optimization to realize sustainable Advanced Air Mobility (AAM) systems such as eVTOLs and flying cars. Formerly at Bosch Japan, he contributed to mobility system architecture and technical strategy. His work bridges academia and industry through collaborations with organizations like Toyota and JAXA, addressing socio-technical challenges in next-generation mobility. He holds a Ph.D. in System Engineering from Keio University, with research experiences at Purdue University and ETH Zurich, and has published journal papers, patents, and invited talks on AAM design, simulation, and technology innovation.

*Research Interests: Advanced Air Mobility, System Optimization, System Dynamics*



*Wishing our global community a restful year-end.*



*Stay tuned for the next Newsletter!*



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